

REMARKS

The Office Action of April 14, 2004 has been received and carefully reviewed. It is submitted that, by this Communication, all bases of rejection and objection are traversed and overcome. Upon entry of this Communication, Claims 1-31 remain in the application. Claims 32-49 have been withdrawn by the Examiner as being directed to a non-elected invention. As such, claims 32-49 were previously cancelled without prejudice. Reconsideration of the claims as amended is requested.

At the outset, Applicants' Attorney would like to sincerely thank Examiner Szekely for all the time and courtesies extended during the telephonic interview of July 27, 2004. During the interview, the pending claims and cited references were discussed at length. The Examiner suggested that Applicants submit a Declaration pursuant to 37 C.F.R. 1.132 to prove that the Englebrecht and Okabayashi references include in their exemplary listings and ratios of possible materials some materials and/or ratios thereof which do not perform the patentees' stated function, and thus do not distinguish between those materials/ratios which work and those which do not work.

Applicants include such a 132 Declaration herewith, and respectfully submit that this Declaration obviates some of the cited references.

Claims 1-10 and 12-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. According to the Examiner, the claim(s) contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Examiner states that there is no mention of a "substantially hydrophobic" copolymer in the specification.

Although Applicants do not acquiesce to this rejection, in order to expedite prosecution, "substantially hydrophobic" has been deleted from the claims in which these recitations appeared. As such, Applicants respectfully submit that the rejection under 35 U.S.C. 112, first paragraph has been traversed and overcome.

Claims 1-31 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner states that the term "substantially hydrophobic" in claim 1 is not defined by the claims, nor by the specification, and that one skilled in the art would not reasonably

be apprised of the scope of the invention. The Examiner states that numerical definition is required. Further, the Examiner states that in claims 11 and 17-31, it is not clear whether the claimed amounts or ratios are by weight, volume, or mole.

Applicants respectfully submit that the term “substantially hydrophobic” has been removed from the claims, though Applicants reiterate that they do not acquiesce to the Examiner’s rejection. Further, Applicants have amended independent claims 1 and 18 to recite that the hydrophilic monomer amount ranges between about 0% and about 25% of the copolymer, and that the hydrophobic monomer amount ranges between about 75% and about 100% of the copolymer. Support for these changes may be found in the specification as filed on page 18, line 18.

Regarding the Examiner’s assertion that is not clear whether the amounts or ratios are by weight, volume, or mole, the Applicants respectfully submit that one skilled in the art would know that the amounts or ratios are measured in mole percents. This is supported by the 1.132 Declaration filed herewith.

Claims 1-31 stand rejected under 35 U.S.C. 102(b) as being anticipated by Tezuka et al. (4,089,830), Wilson et al. (4,758,612), Wilson et al. (4,569,954), Englebrecht (4,872,936), Okayabashi et al. (5,051,453) Kato et al. (5,520,725) or National Res Dev Corp (GB 1,507,981). Claims 1-31 also stand rejected under 35 U.S.C. 103(a) as being unpatentable over any of the above references. The Examiner restates the grounds for rejection from the previous Office Actions. Further, the Examiner states that Wilson et al. (‘612) discloses the addition of 5-70% by weight of an emulsion of a substantially water-insoluble polymer” to their system; that Engelbrecht (‘936) teaches 20-60% acid groups and that “mixtures with less than 5% also definitely exhibit the features peculiar to those in accordance with the invention”; and that Okabayashi (‘453) recites a copolymer with at least 5 mole% of unsaturated carboxylic acid.

Applicants respectfully submit that during the July 27, 2004 telephone conference the Examiner duly noted that Wilson et al. (‘612) teaches an **emulsion** that may be incorporated within a hydrophilic cement composition, not a copolymer as recited in Applicants’ claims. He asked that Applicants re-submit their previous argument in this regard in the instant amendment. It is submitted that an emulsion (a suspension or dispersal of tiny droplets of hydrophobic material in a hydrophilic material) is distinct from a copolymer solution, and does NOT form a hydrophobic copolymer—if it did, it would no longer function as a cement composition, thus destroying the stated purpose of Wilson. Regardless, this emulsion is only added where the

composition is intended for use in a low humidity environment, and although Wilson discloses the addition of 5-70% by weight of an emulsion of a “substantially water-insoluble polymer”, the range refers to the weight percent of emulsion added and does not refer anywhere to an amount of water-insoluble polymer. Again, the addition of the emulsion would not be significant enough to change the hydrophobicity of the dental cement, which is hydrophilic in order to function as intended.

Further, Applicants respectfully submit that the 1.132 Declaration submitted herewith obviates the Englebrecht and Okabayashi references. Exhibit 1 of the 1.132 Declaration is a Table indicating the results of the experiments and research conducted based on the teachings of both Englebrecht (5-100% acid groups) and Okabayashi (5-95% acrylic acid). The results indicate that the 100% hydrophilic polymer is water soluble and would function properly as dental cement. The results also indicate that the copolymers containing both hydrophilic and hydrophobic monomers are not water soluble and thus would not function properly as dental cements. These results are contrary to the teachings and stated purposes of both Englebrecht and Okabayashi. Applicants respectfully submit that the experimental results and research findings based on the teachings of Englebrecht and Okabayashi prove that by including some materials/ratios which would not function according to patentees' stated purpose, the patentees did not distinguish between those materials/ratios which function properly as dental cement, and those which do not function properly as dental cement. Further, since the materials/ratios from these references upon which the Examiner relied to reject Applicants' claims do not function for the patentees' stated purpose, it is submitted that these relied upon materials/ratios are not taught or suggested by the cited references, thereby obviating these references.

The remaining references also disclose water soluble/aqueous compositions. Contrary to the Examiner's prior assertion that the references “mention Applicants' glass ionomers and polymers, among them hydrophilic-hydrophobic copolymers, which can be used in dental cement” (emphasis added), it is submitted that the mere mention (almost in passing) of copolymer(s) which may contain a hydrophobic monomer does not anticipate or render obvious Applicants' invention as defined in amended claims 1 and 18 which recites a copolymer having “the hydrophobic monomer amount ranging between about 75% and about 100% of the copolymer.” As proven by the results shown in Exhibit 1, a hydrophilic-hydrophobic copolymer would not function properly as dental cement.

None of the references, either alone or in combination, disclose a copolymer having between about 75% and about 100% of a hydrophobic monomer. The purpose and teaching of each of the cited references is to provide a composition useful for dental cement only—this actually **teaches away** from Applicants' invention as defined in amended claims 1 and 18. If the skilled artisan were to use a composition as defined in Applicants' claims 1 and 18, it is submitted that the composition would no longer function as dental cement. As such, this would destroy the stated purpose of the patentees' inventions. Thus, it is submitted that the skilled artisan would not be led to, and in fact would be led away from forming a composition utilizing a copolymer having between about 75% and about 100% of a hydrophobic monomer.

For all the reasons stated above, it is submitted that Applicants' invention as defined in amended claims 1 and 18 is not anticipated, taught or rendered obvious by the cited references, either alone or in combination, and patentably defines over the art of record. Claims 2-17 and 19-31 depend ultimately from one of claims 1 or 18. It is submitted that, through this dependency, Applicants' invention as defined in claims 2-17 and 19-31 also is not anticipated, taught or rendered obvious by the cited references, either alone or in combination, and patentably defines over the art of record.

In summary, it is submitted that claims 1-31 are now in a condition suitable for allowance, notification of which is respectfully requested. Further and favorable consideration is requested. If the Examiner believes it would expedite prosecution of the above-identified application, he is cordially invited to contact Applicants' Attorney at the below-listed telephone number.

Respectfully submitted,

DIERKER & ASSOCIATES, P.C.



Julia Church Dierker
Attorney for Applicants
Registration No. 33368
(248) 649-9900

3331 West Big Beaver Rd., Suite 109
Troy, Michigan 48084
Dated: September 14, 2004
JCD/JRO/jro